	Hits	Search Text	DBs	Time Stamp
1	344	dictyostelium adj1 discoideum	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/03/27 14:42
2	613	dictyostelium	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/03/27 14:43
3	24134	screen with (agent compound compounds compositions substance)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/03/27 14:44
4	48	express$3 with (repB repD APE)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/03/27 14:45
5	2	express$3 with (repB with repD with APE)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/03/27 14:44
6	106	l2 and l3	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/03/27 14:45
7	2	l6 and l4	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/03/27 14:45
8	2	l2 and l4	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/03/27 14:45

L5 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:107586 CAPLUS
DOCUMENT NUMBER: 136:161319
TITLE: **Dictyostelium** discoideum gene expression-based methods of screening agents for use in cancer therapy and prevention
INVENTOR(S): Alexander, Hannah; Alexander, Stephen
PATENT ASSIGNEE(S): The Curators of the University of Missouri, USA
SOURCE: PCT Int. Appl., 35 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002010435	A1	20020207	WO 2001-US23538	20010724
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2002042044	A1	20020411	US 2001-915225	20010725

PRIORITY APPLN. INFO.: US 2000-221908P P 20000731
AB Methods are provided for screening agents for cancer therapeutic and prophylactic activity. In particular embodiments, cells of the cellular slime mold **Dictyostelium** discoideum are contacted with candidate agents and the expression of genes in the nucleotide excision repair and base excision repair pathways are examd. Such genes include the helicases **repB** and **repD**, and the apurinic-apyrimidinic endonuclease **APE**.
REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 6 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 1
ACCESSION NUMBER: 1998:362210 BIOSIS
DOCUMENT NUMBER: PREV199800362210
TITLE: Rapid changes of nucleotide excision repair gene expression following UV-irradiation and cisplatin treatment of **Dictyostelium** discoideum.
AUTHOR(S): Yu, Sung-Lim; Lee, Sung-Keun; Alexander, Hannah; Alexander, Stephen (1)
CORPORATE SOURCE: (1) Div. Biol. Sci., 422 Tucker Hall, Univ. Missouri, Columbia, MO 65211-7400 USA
SOURCE: Nucleic Acids Research, (July 15, 1998) Vol. 26, No. 14, pp. 3397-3403.
ISSN: 0305-1048.
DOCUMENT TYPE: Article
LANGUAGE: English

AB Organisms use different mechanisms to detect and repair different types of DNA damage, and different species vary in their sensitivity to DNA damaging agents. The cellular slime mold **Dictyostelium** discoideum has long been recognized for its unusual resistance to UV and ionizing radiation. We have recently cloned three nucleotide excision repair (NER) genes from **Dictyostelium**, the **repB**, D and E genes (the homologs of the human xeroderma pigmentosum group B, D and E genes, respectively). Each of these genes has a unique pattern of expression during the multicellular development of this organism. We have now examined the response of these genes to DNA damage. The **repB** and D DNA helicase genes are rapidly and transiently induced in a dose dependent manner following exposure to both UV-light and the widely used chemotherapeutic agent cisplatin. Interestingly, the repE mRNA level is repressed by UV but not by cisplatin, implying unique signal transduction pathways for recognizing and repairing different types of damage. Cells from all stages of growth and development display the same pattern of NER gene expression following exposure to UV-light. These results suggest that the response to UV is independent of DNA replication, and that all the factors necessary for rapid transcription of these NER genes are either stable throughout development, or are continuously synthesized. It is significant that the up-regulation of the **repB** and D genes in response to UV and chemical damage has not been observed to occur in cells from other species. We suggest that this rapid expression of NER genes is at least in part responsible for the unusual resistance of **Dictyostelium** to DNA damage.

L5 ANSWER 3 OF 6 MEDLINE DUPLICATE 2
ACCESSION NUMBER: 1998438729 MEDLINE
DOCUMENT NUMBER: 98438729 PubMed ID: 9765592
TITLE: A mutation in **repB**, the **dictyostelium** homolog of the human xeroderma pigmentosum B gene, has increased sensitivity to UV-light but normal morphogenesis.
AUTHOR: Lee S K; Yu S L; Alexander H; Alexander S
CORPORATE SOURCE: Division of Biological Sciences, University of Missouri, Columbia 65211-7400, USA.
CONTRACT NUMBER: GM53929 (NIGMS)
SOURCE: BIOCHIMICA ET BIOPHYSICA ACTA, (1998 Aug 20) 1399 (2-3) 161-72.
Journal code: 0217513. ISSN: 0006-3002.
PUB. COUNTRY: Netherlands
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-U77065
ENTRY MONTH: 199810
ENTRY DATE: Entered STN: 19981029
Last Updated on STN: 19981029
Entered Medline: 19981022

AB Nucleotide excision repair (NER) is an important cellular defense mechanism which protects the integrity of the genome by removing DNA damage caused by UV-light or chemical agents. In humans, defects in the NER pathway result in the disease xeroderma pigmentosum (XP) which is characterized by increased UV-sensitivity, with increased propensity for skin cancer, and an array of developmental abnormalities. Some XP patients exhibit, in addition, symptoms of Cockayne's syndrome (CS) and trichothiodystrophy (TTD), which are characterized by increased UV-sensitivity, without increased cancer incidence, and an array of developmental abnormalities. Some NER genes, including the DNA helicases XPB and XPD, have been shown to function in transcription as well as repair, by virtue of being an integral part of the transcription initiation factor TFIIH. This dual function may account for the

above-mentioned wide pleiotropy of phenotypes associated with defects in NER genes, and may explain why some XP patients exhibit developmental abnormalities in addition to XP symptoms. To date, only five XPB patients with three different mutations in the XPB gene have been reported. One of these mutations is a C to A transversion at the splice site at the beginning of the last exon, which resulted in a frameshift throughout the last exon. This patient shows combined clinical symptoms of XP and CS. The recent cloning of the **repB** gene, the **Dictyostelium** discoideum homolog of XPB, allowed us to generate a similar C-terminal mutation in the **Dictyostelium**, in order to test whether the defect in this NER gene has an effect on growth or development. To this end, we have constructed a C-terminal deletion **repB** mutant in **Dictyostelium**. To avoid the possibility that a null mutant would be lethal, we used direct homologous recombination to create a 46 amino acid C-terminal deletion mutant. Indeed, we were unable to obtain mutants with a longer 95 amino acid deletion. The **repB** delta C46 mutants showed an increased sensitivity to UV-light, but a normal pattern of UV-induced expression of repair genes, and no immediately obvious defect in either growth rate or development. The results suggest that the associated developmental defects in the human XPB patients may be due to mutations in another gene.

L5 ANSWER 4 OF 6 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
ACCESSION NUMBER: 1998:479997 BIOSIS
DOCUMENT NUMBER: PREV199800479997
TITLE: A mutation in **repB**, the **Dictyostelium** homolog of the human xeroderma pigmentosum B gene, has increased sensitivity to UV-light but normal morphogenesis.
AUTHOR(S): Lee, Sung-Keun; Yu, Sung-Lim; Alexander, Hannah; Alexander, Stephen (1)
CORPORATE SOURCE: (1) Div. Biol. Sci., 422 Tucker Hall, Univ. Missouri, Columbia, MO 65211-7400 USA
SOURCE: Biochimica et Biophysica Acta, (Aug. 20, 1998) Vol. 139, No. 2-3, pp. 161-172.
ISSN: 0006-3002.
DOCUMENT TYPE: Article
LANGUAGE: English

AB Nucleotide excision repair (NER) is an important cellular defense mechanism which protects the integrity of the genome by removing DNA damage caused by UV-light or chemical agents. In humans, defects in the NER pathway result in the disease xeroderma pigmentosum (XP) which is characterized by increased UV-sensitivity, with increased propensity for skin cancer, and an array of developmental abnormalities. Some XP patients exhibit, in addition, symptoms of Cockayne's syndrome (CS) and trichothiodystrophy (TTD), which are characterized by increased UV-sensitivity, without increased cancer incidence, and an array of developmental abnormalities. Some NER genes, including the DNA helicases XPB and XPD, have been shown to function in transcription as well as repair, by virtue of being an integral part of the transcription initiation factor TFIIH. This dual function may account for the above-mentioned wide pleiotropy of phenotypes associated with defects in NER genes, and may explain why some XP patients exhibit developmental abnormalities in addition to XP symptoms. To date, only five XPB patients with three different mutations in the XPB gene have been reported. One of these mutations is a C to A transversion at the splice site at the beginning of the last exon, which resulted in a frameshift throughout the last exon. This patient shows combined clinical symptoms of XP and CS. The recent cloning of the **repB** gene, the **Dictyostelium** discoideum homolog of XPB, allowed us to generate a similar C-terminal mutation in the **Dictyostelium**, in order to test whether the defect in this NER gene has an effect on growth or development. To this

end, we have constructed a C-terminal deletion **repB** mutant in **Dictyostelium**. To avoid the possibility that a null mutant would be lethal, we used direct homologous recombination to create a 46 amino acid C-terminal deletion mutant. Indeed, we were unable to obtain mutants with a longer 95 amino acid deletion. The repBDELTAC46 mutants showed an increased sensitivity to UV-light, but a normal pattern of UV-induced expression of repair genes, and no immediately obvious defect in either growth rate or development. The results suggest that the associated developmental defects in the human XPB patients may be due to mutations in another gene.

L5 ANSWER 5 OF 6 MEDLINE DUPLICATE 3
ACCESSION NUMBER: 97315327 MEDLINE
DOCUMENT NUMBER: 97315327 PubMed ID: 9171087
TITLE: Differential developmental expression of the rep B and rep D xeroderma pigmentosum related DNA helicase genes from **Dictyostelium** discoideum.
AUTHOR: Lee S K; Yu S L; Garcia M X; Alexander H; Alexander S
CORPORATE SOURCE: Division of Biological Sciences, 403 Tucker Hall, University of Missouri, Columbia, MO 65211, USA.
CONTRACT NUMBER: GM53929 (NIGMS)
SOURCE: NUCLEIC ACIDS RESEARCH, (1997 Jun 15) 25 (12) 2365-74. Journal code: 0411011. ISSN: 0305-1048.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-U77065; GENBANK-U77066
ENTRY MONTH: 199707
ENTRY DATE: Entered STN: 19970812
Last Updated on STN: 19990129
Entered Medline: 19970729

AB DNA helicases are essential to many cellular processes including recombination, replication and transcription, and some helicases function in multiple processes. The helicases encoded by the Xeroderma pigmentosum (XP) B and D genes function in both nucleotide excision repair and transcription initiation. Mutations that affect the repair function of these proteins result in XP while mutations affecting transcription result in neurological and developmental abnormalities, although the underlying molecular and cellular basis for these phenotypes is not well understood. To better understand the developmental roles of these genes, we have now identified and characterized the rep B and rep D genes from the cellular slime mold **Dictyostelium** discoideum . Both genes encode DNA helicases of the SF2 superfamily of helicases. The rep D gene contains no introns and the rep B gene contains only one intron, which makes their genomic structures dramatically different from the corresponding genes in mammals and fish. However the predicted **Dictyostelium** proteins share high homology with the human XPB and XPD proteins. The single copy of the rep B and D genes map to chromosomes 3 and 1, respectively. The expression of rep B and D (and the previously isolated rep E) genes during multicellular development was examined, and it was determined that each rep gene has a unique pattern of expression, consistent with the idea that they have specific roles in development. The pattern and extent of expression of these genes was not affected by the growth history of the cells, implying that the expression of these genes is tightly regulated by the developmental program. The expression of the rep genes is a very early step in development and may well represent a key event in the initiation of development in this organism.

L5 ANSWER 6 OF 6 MEDLINE DUPLICATE 4

ACCESSION NUMBER: 96226184 MEDLINE
DOCUMENT NUMBER: 96226184 PubMed ID: 8657579
TITLE: Apurinic/apyrimidinic (AP) endonuclease from **Dictyostelium** discoideum: cloning, nucleotide sequence and induction by sublethal levels of DNA damaging agents.
AUTHOR: Freeland T M; Guyer R B; Ling A Z; Deering R A
CORPORATE SOURCE: Department of Biochemistry and Molecular Biology, The Pennsylvania State University, University Park, PA 16802, USA.
CONTRACT NUMBER: GM16620 (NIGMS)
SOURCE: NUCLEIC ACIDS RESEARCH, (1996 May 15) 24 (10) 1950-3. Journal code: 0411011. ISSN: 0305-1048.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-U31631
ENTRY MONTH: 199607
ENTRY DATE: Entered STN: 19960808
Last Updated on STN: 19961015
Entered Medline: 19960731

AB We have cloned an AP endonuclease gene (APEA) from **Dictyostelium** discoideum, along with 1.8 kb of the 5' flanking region. There are no introns. The sequence predicts a protein of 361 amino acids, showing high homology to the major human/Escherichia coli exonuclease III family of AP endonucleases. There is 47% identity and 64% similarity to the **Ape** endonuclease of human cells using the C-terminal 257 amino acids of the **Dictyostelium** protein. The 104 amino acids on the N-terminus show only low homology with other AP endonucleases. Instead, this region shows high homology with the acid-rich regions of proteins associated with chromatin, such as nucleolins and HMG proteins. The gene is transcriptionally activated up to 7-fold after treatment of cells with sublethal levels of DNA damaging agents, including ultraviolet light, MNNG and bleomycin. Induction does not occur following blocking of replication fork polymerases with aphidicolin. It is not eliminated by treatment with kinase or phosphatase inhibitors. Four DNA damage-sensitive mutants all retained the DNA damage-induced up-regulation.

(FILE 'HOME' ENTERED AT 14:57:26 ON 27 MAR 2003)

FILE 'MEDLINE, BIOSIS, CAPLUS, AGRICOLA' ENTERED AT 14:58:34 ON 27 MAR 2003

L1 21680 S DICTYOSTELIUM OR DICTYOSTELIA
L2 19864 S SCREEN AND (AGENTS OR COMPOUNDS OR COMPOSITIONS OR SUBSTANCE)
L3 1 S L1 AND L2
L4 14 S L1 AND (REPB OR REPD OR APE)
L5 6 DUP REMOVE L4 (8 DUPLICATES REMOVED)